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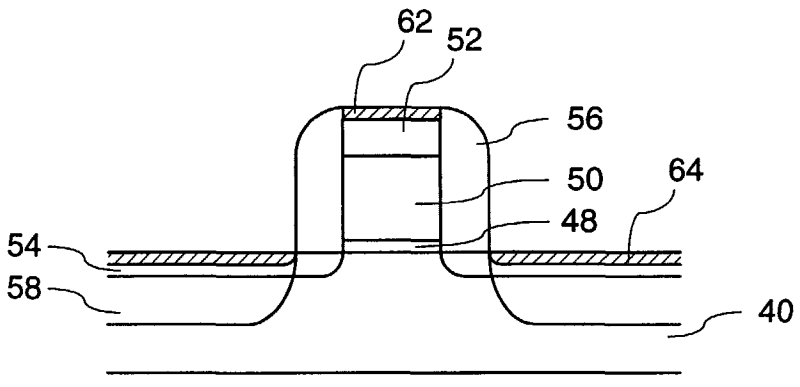
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(54) Title: MOSFETS INCORPORATING NICKEL GERMANOSILICIDED GATE AND METHODS OF THEIR FORMATION



(57) Abstract: A MOSFET gate or a MOSFET source or drain region comprises silicon germanium or polycrystalline silicon germanium. Silicidation with nickel is performed to form a nickel germanosilicide (62, 64) that preferably comprises the monosilicide phase of nickel silicide. The inclusion of germanium in the silicide provides a wider temperature range within which the monosilicide phase may be formed, while essentially preserving the superior sheet resistance exhibited by nickel monosilicide. As a result, the nickel germanosilicide is capable of withstanding greater temperatures during subsequent processing than nickel monosilicide, yet provides approximately the same sheet resistance and other beneficial properties as nickel monosilicide.

WO 2004/038807 A1